REMARKS/ARGUMENTS

Claim Amendments

The Applicant has not amended any claims. Applicant respectfully submits no new matter has been added. Accordingly, claims 42-77 are pending in the application. Favorable reconsideration of the application is respectfully requested in view of the foregoing amendments and the following remarks.

Claim Rejections – 35 U.S.C. § 103 (a)

Claims 42-48, 51-57, 60-67 and 70-76 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Billstrom (US 5,590,133) in view of Rasanen'006, et al. (US 6,647,006). The Applicant respectfully traverses the rejection of these claims.

The Applicant discloses a method and system for transferring data between a circuit switched and packet switched network. Two network layers are utilized; one layer for signaling and one layer for payload. An interface, comprising separate functions for handling the signaling and payload transfers, is provided between the two networks. A protocol stack is disclosed that provides individual protocol stacks in a mobile station (MS), a BTS and a media gateway of the packet network.

The interface comprises a signaling gateway and a media gateway and the second layer provides a direct connection (Figure 1) between a base station system and the media gateway for sending and receiving call and payload information from the media gateway (page 5, lines 6-35). As noted above, the protocol stack comprises 3 protocol stacks resident on the MS, BTS and media gateway. The protocol stacks on the BTS and media gateway each include a discontinuous transmission layer (DTX) for discarding frames lacking payload or user information in either the uplink or downlink direction. In the uplink direction empty frames are detected (page 19, lines 17-31) discarded in the BTS (Page 19, lines 10-32) and in the downlink direction empty frames are detected and discarded in the Media Gateway (Page 22, lines 5-10).

The Applicant respectfully directs the Examiner's attention to elements of independent claim 42.

responsive to detecting a received information frame lacking payload information, a first discontinuous transmission (DTX) means in the second protocol stack discarding the received information frame to improve the data rate, wherein remaining information frames are forwarded to the packet switched network via a direct connection between the radio network means and the media gateway. (emphasis added)

The Applicant respectfully submits that the Billstrom and Rasanen references fail to disclose at least the above emphasized limitations.

The Billstrom reference appears to disclose apparatuses and mobile stations for providing packet data services in TDMA cellular systems (Abstract). Shared packet data channels (PDCH) are an integral part of the Billstrom reference as is the use of Interworking Functions (IWF) for connecting the TDMA network with a "further" or cellular network.

It is well known in the telecommunications art that the term "Interworking" is a term used to define the ability of one technology to communicate, or Interwork, with another. Network Interworking is the process of tunneling one protocol or technology across another protocol or technology. This process connects two like points across an established tunnel. As noted in Billstrom, an Interworking Function provides interworking with external networks performing protocol conversion, address translation and routing packet data traffic between cooperating PLMNs (Col. 7, lines 42-48).

It is also well known in the art that a Media Gateway is a function incorporated in a cellular network (typically 2.5G or higher) for performing specific tasks. Typically, a media gateway converts multimedia input and acts as a translation unit between disparate telecommunications networks such as PSTN; Next Generation Networks; 2G, 2.5G and 3G radio access networks or PBX. Media Gateways enable multimedia communications across Next Generation Networks over multiple transport protocols such as ATM and IP.

The Billstrom reference does not appear to disclose sending signaling on a first layer and sending payload via a direct connection on a second layer to a media gateway. Billstrom in fact, discloses sending both data transfer and the associated control signaling over Packet data channels (PDCH) on a physical TDMA channel (Col.

Page 11 of 14

7, lines 12-18). Further, Billstrom discloses interconnecting MSCs via a backbone network with IWFs, (Col. 7, lines 40-56) which is in direct contrast to the direct connection disclosed in the Applicant's invention.

The Rasanen reference appears to disclose a system for transferring data across an interface for high-speed radio traffic where the total data rates at the radio interface and at the network interface are different. The total data rates of the network interface and the radio interface are rate-adapted by transferring fill data, in addition to payload, in transmission frames between a radio access network element, such as a base station, and the interworking function (IWF). A BTS rate-adapts RLP frames by transmitting meaningless fill data in an E-TRAU frame if no RLP frames are available at \ the moment of transmission. In other words, Rasanen adds "filled" frames to change data rate. (Summary). Also, the frame may be a filled frame or an invalid RLP frame, which is discarded by the receiving RLP unit (Col. 7, lines 40-49)

In the Official Action, the Rasanen reference is cited for teaching a discontinuous transmission means in a second protocol stack in a radio network means (BTS) discarding received information frames. A correspondence is drawn between the DTX of the Applicant's invention and the description of RLP frame manipulation found in Col 7, lines 25-62 of the Rasanen reference. However, the Applicant has reviewed this cited portion of Rasanen and find no reference to discarding frames. Instead, the cited portion of Rasanen describes the insertion of meaningless fill data in an E-TRAU frame. In contrast to the Rasanen reference, the Applicant's invention removes, essentially, empty frames, or, as the claim element of independent claim 42 states in part, "...a received information frame lacking payload information". In the uplink direction the empty frames are detected and removed in the BTS and in the downlink direction the empty frames are detected and removed in the media gateway.

The interface of the Applicant's invention utilizes a media gateway, not an Interworking function as disclosed in Rasenen. Though the Interworking function in the Rasenen reference is capable of providing some of the same services of a media gateway, the IWF in Rasenen discards filled frames or corrupted frames that were filled

or corrupted intentionally by the BTS. This is contrary to the operation of the Applicant's invention, which discards frames lacking payload (i.e., empty) frames.

Neither Billstrom nor Rasenen, individually or in combination, teach discarding frames lacking data, or forwarding information frames via a direct connection between the radio network means (BTS) and the media gateway. Independent claims 50, 60, and 70 are analogous to claim 42 and contain similar limitations. The Applicant respectfully requests the withdrawal of the rejection of claims 42, 50, 60 and 70 and the respective dependent claims.

Claims 49, 50, 58, 59, 68, 69 and 77 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Billstrom in view of Rasanen'006 as applied to claim 41 above, and further in view of Mallory (US 6,335,933). The Applicant respectfully traverses the rejection of these claims.

The Mallory reference appears to disclose a method for sending frames over an unreliable path. The sender retains a copy of each frame sent to a receiver until all frames are confirmed received as sent. If a frame is not received properly the sender sends a copy of the retained frame. It is respectfully submitted that Mallory does not address the above-identified deficiencies of Billstrom and Rasanen with respect to the Applicant's invention.

The combination of the Billstrom, Rasanen and Mallory references fail to teach the limitations in independent claims 42, 50, 60, and 70; those of discarding frames that lack data or forwarding information frames via a direct connection between the radio network means (BTS) and the media gateway. Claims 49, 50, 58, 59, 68, 69 and 77 contain the same limitations as the respective independent claims. The Applicant respectfully requests withdrawal of the aforementioned rejected dependent claims.

CONCLUSION

In view of the foregoing remarks, the Applicant believes all of the claims currently pending in the Application to be in a condition for allowance. The Applicant, therefore, respectfully requests that the Examiner withdraw all rejections and issue a Notice of Allowance for all pending claims.

The Applicant requests a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,

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